NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

Program Solicitation

NSF 06-527

***Replaces Document* NSF 04-506**

National Science Foundation
Directorate for Education and Human Resources
Division of Undergraduate Education

Letter of Intent Due Date(s) *(optional):*

March 15, 2006

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

April 12, 2006

REVISIONS AND UPDATES

1. The program was formerly entitled “Computer Science, Engineering, and Mathematics Scholarship (CSEMS) Program.” The title of the program is changed to reflect the expanded disciplinary eligibility.
2. Eligible disciplines now include the biological sciences (except medicine and other clinical fields), physical sciences, mathematical sciences, computer and information sciences, the geosciences, and engineering, as well as technology areas associated with the preceding fields.
3. The maximum scholarship amount is increased to $10,000 per student per year, still limited by a student’s Federal financial need.
4. The maximum NSF grant size is increased to $500,000 in total or $125,000 per year for up to four years, with an optional initial period of up to one year for planning.
5. An Institution may submit one proposal from each constituent school or college that awards degrees in an eligible field. See Section III.A. below for details.
6. Instead of indirect costs, an institution may request up to 7% of the scholarship amount for administrative costs and up to 8% of the scholarship amount for student support costs. These costs are included in the maximum award amount.

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM)

Synopsis of Program:

This program makes grants to institutions of higher education to support scholarships for academically talented, financially needy students, enabling them to enter the workforce following completion of an associate, baccalaureate, or graduate level degree in science and engineering disciplines. Grantee institutions are responsible for selecting scholarship recipients, reporting demographic information about student scholars, and managing the S-STEM project at the institution.

The program does not make scholarship awards directly to students; students should contact their institution's Office of Financial Aid for this and other scholarship opportunities.

Cognizant Program Officer(s):

- Duncan E. McBride, Section Head, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, fax: (703) 292-9015, email: dmcbride@nsf.gov
- Bevlee A. Watford, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-5323, fax: (703) 292-9015, email: bwatford@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

- 47.076 --- Education and Human Resources

Eligibility Information

- **Organization Limit:** Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate or graduate degrees in science and engineering disciplines listed in Section III.A. are invited to submit proposals.
- **PI Eligibility Limit:** The Principal Investigator must be a faculty member currently teaching within one of the S-STEM disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall management responsibility. Other members of the S-STEM project management team may be listed as Co-Principal Investigators.
- **Limit on Number of Proposals:** An Institution may submit one proposal from each constituent school or college that awards degrees in an eligible field. See Section III.A. below for details.

Award Information

- **Anticipated Type of Award:** Standard or Continuing Grant
- **Estimated Number of Awards:** 110
- **Anticipated Funding Amount:** $50,000,000 for FY 2006, pending availability of funds. Awards are normally not expected to exceed $500,000 in total. Annual budgets are limited to $125,000.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

- **Letters of Intent:** Submission of Letters of Intent is optional. Please see the full text of this solicitation for further information.
- **Full Proposal Preparation Instructions:** This solicitation contains information that supplements the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- **Cost Sharing Requirements:** Cost Sharing is not required by NSF.
- **Indirect Cost (F&A) Limitations:** No indirect costs are allowed.
- **Other Budgetary Limitations:** Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

- **Letters of Intent *(optional):***
  March 15, 2006
- **Full Proposal Deadline Date(s)** (due by 5 p.m. submitter's local time):
  April 12, 2006

Proposal Review Information

- **Merit Review Criteria:** National Science Board approved criteria. Additional merit review considerations apply. Please see the full text of this solicitation for further information.

Award Administration Information

- **Award Conditions:** Standard NSF award conditions apply.
- **Reporting Requirements:** Additional reporting requirements apply. Please see the full text of this solicitation for further information.

TABLE OF CONTENTS

I. INTRODUCTION

The NSF Scholarships in Science, Technology, Engineering, and Mathematics (S-STEM) program provides institutions with funds for student scholarships to encourage and enable academically talented but financially needy students to enter the workforce following completion of an associate, baccalaureate, or graduate degree in fields of science, technology, engineering, or mathematics. The program was established by the National Science Foundation (NSF) in accordance with

the American Competitiveness and Workforce Improvement Act of 1998 (P.L. 105-277) as modified by P.L. 106-313 and P. L.108-447 in 2004. The Act reflects the national need to increase substantially the number of American scientists and engineers.

II. PROGRAM DESCRIPTION

The S-STEM program emphasizes the importance of recruiting students to science and engineering disciplines, mentoring and supporting students through degree completion, and partnering with employers to facilitate student career placement in the STEM workforce. Participating institutions are expected to support the goals of the S-STEM program including:

- Improved educational opportunities for students;
- Increased retention of students to degree achievement;
- Improved student support programs at institutions of higher education;
- Increased numbers of well educated and skilled employees in technical areas of national need.

Students to be awarded scholarships must demonstrate academic talent and financial need. In addition, they must be US citizens, permanent residents, nationals, or refugees. Refer to Section III. C. (Scholarship Recipients) in this Solicitation for details.

It is expected that scholarship recipients will achieve at least one of the following by the end of the scholarship award period:

- Receive an associate, baccalaureate, or graduate degree in one of the S-STEM disciplines;
- Transfer from an associate degree program to a baccalaureate degree program or from an undergraduate program to a graduate program in one of the S-STEM disciplines;
- Successfully complete a stage within an associate, baccalaureate, or graduate degree program in one of the S-STEM disciplines that, in the particular institution, is documented and described as a point of unusually high attrition.

S-STEM grants may be made for up to five years (four scholarship years and an optional initial planning period) and may provide individual scholarships of up to $10,000 per year, depending on financial need. Grantee institutions may elect to support individual student scholars for four years or may elect to support several cohorts of students for a shorter duration within the award period.

Please refer to Section V.A.5., Project Description, for details about specific S-STEM project requirements.

III. ELIGIBILITY INFORMATION

A. Institutions

1. Institutions of higher education (as defined in section 101 (a) of the Higher Education Act of 1965) in the United States and its territories that grant associate, baccalaureate, or graduate degrees in the disciplines listed in section C, below are invited to submit proposals.
2. An institution may submit one proposal from each constituent college or school that awards eligible degrees. (For example, a university with a College of Engineering, a School of Life Sciences, and a College of Arts and Sciences could submit one proposal from each for a total of three. However, within a College of Engineering, if the Department of Electrical Engineering were submitting a proposal, a proposal from the Department of Mechanical Engineering could be submitted only in a subsequent year. The two departments could also submit a proposal jointly.)
3. An institution without constituent schools (for example, a 4-year college or a community college) may submit one proposal each year.
4. An institution that is part of a larger system is considered separate for this purpose if it is geographically separate and has its own chief academic officer.

B. Principal Investigator

The Principal Investigator must be a faculty member currently teaching within one of the S-STEM disciplines who can provide the leadership required to ensure the success of the project. Projects involving more than one department within an institution are eligible, but a single Principal Investigator must accept overall

management responsibility. Other members of the S-STEM project management team may be listed as Co-Principal investigators.

C. Scholarship Recipients

S-STEM scholarship recipients will be selected by the awardee institution, but must:

- be citizens of the United States, nationals of the United States (as defined in section 101(a) of the Immigration and Nationality Act), aliens admitted as refugees under section 207 of the Immigration and Nationality Act, or aliens lawfully admitted to the United States for permanent residence;
- be enrolled full time in a degree program at the associate, baccalaureate, or graduate level in one of the following disciplines. Enrollment must be full-time for each semester or quarter a student receives a scholarship.
    - biological sciences (except medicine and other clinical fields);
    - physical sciences, including physics, chemistry, astronomy, and materials science;
    - mathematical sciences;
    - computer and information sciences;
    - geosciences;
    - engineering;
    - technology areas associated with the preceding fields (for example, biotechnology, chemical technology, engineering technology, information technology, etc.)
- demonstrate academic potential or ability;
- demonstrate financial need, defined for undergraduate students by the US Department of Education rules for need-based Federal financial aid, or, for graduate students, defined as financial eligibility for Graduate Assistance in Areas of National Need (GANN).

  Financial need is defined for undergraduates by the U.S. Department of Education as the Cost of Attendance (COA) for an institution minus the Estimated Family Contribution (EFC) for the student (see http://www.studentaid.ed.gov/students/publications/student_guide/2004_2005/english/index.htm). The Cost of Attendance, determined by each educational institution, is the total amount it will cost a student to go to school, including tuition and fees; on-campus room and board (or a housing and food allowance for off-campus students); allowances for books, supplies, transportation, loan fees, dependent care, costs related to a disability; and miscellaneous expenses. The Estimated Family Contribution is determined by the Free Application for Federal Student Aid (FAFSA) form and represents the expected family contribution toward the Cost of Attendance (http://www.fafsa.ed.gov). It is recommended that the PI consult the campus financial aid office for more information regarding the institutional COA and the calculation of student financial need.

- be part of a natural student cohort that is likely to associate during the scholarship period. Students may be from a single major, or from a group that will take several classes together, or from some other group that the proposal describes. See section V.A.5.j, Special Program Features, below, for more discussion of the rationale for a cohort.

IV. AWARD INFORMATION

The number and size of awards will vary depending upon the scope of projects and availability of funds. In fiscal year 2006, approximately $50 million is expected to be available to support approximately 110 new S-STEM awards.

Awards are normally not expected to exceed $500,000 in total. Annual budgets are limited to $125,000. The award duration may be up to five years (four scholarship years and an optional initial period for planning), within the annual and overall budget limits. The limits include the funds for administrative and support functions as well as the scholarship funds. (See section V.A.8. below for details on the budget.)

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Letters of Intent *(optional):*

Optional Letters of Intent are encouraged and should be prepared and submitted via FastLane by March 15, 2006. Note that NSF will not comment on the Synopsis text; please include only a single sentence describing the project in that section. You must indicate the disciplines to be involved in the space for that purpose. NSF will use the letter of intent to estimate the number of proposals likely to be submitted and their distribution among fields in order to arrange for proposal review.

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

Full Proposal Content

1. **Cover Sheet.**
   While filling out the cover sheet in FastLane, it is important to choose the program solicitation number indicated on the cover of this document "NSF Scholarships in Science, Technology, Engineering, and Mathematics" from the list of programs in the "NSF Unit Consideration" section. This choice must be specified in order to have access to the DUE Project Data Form, which is required for S-STEM proposals.

   An informative title for the proposed Science, Technology, Engineering, and Mathematics Scholarship project must be provided on the appropriate line. Please use the full project title and refrain from using the S-STEM name or acronym, NSF, or the institution's name in the project title.

2. **Project Data Form.**
   A Project Data Form must be completed for all proposals. The information on this form is used to direct proposals to appropriate reviewers and to determine the characteristics of projects supported by the Division of Undergraduate Education. In Fastlane, this form will appear in the list of forms for the proposal only after you have selected the appropriate Program Solicitation number (indicated on the cover of this document) on the proposal cover sheet and have saved the cover sheet.

3. **Project Summary.**
   Provide a brief (300 words or fewer) description of the S-STEM project including the number of scholarships to be provided, the discipline areas to be served by the scholarship funds, the objectives of the project, and basic information about the student recruitment, selection, support, and career placement services to be provided as part of this S-STEM project.

   The project summary MUST address both Merit Review Criteria (Intellectual Merit and Broader Impacts) in separate statements. See Section VI. A., Proposal Review Process, for a statement of the two criteria. NSF will return without review proposals that do not address both criteria in the Project Summary.

4. **Table of Contents.**
   The Table of Contents is generated by FastLane and cannot be edited.

5. **Project Description.**
   The Project Description must conform to GPG formatting requirements and must not exceed 15 single-spaced pages. For legibility, 12-point type is preferred. Proposals that exceed the page limit will be returned without review. The Project Description should contain the following information:

   a. **Results from Prior NSF Support.**
      Please report on the results from related prior NSF support. Provide information about any existing or prior S-STEM (formerly CSEMS) projects at the institution and describe the relationship of this proposed project to the other S-STEM or CSEMS project.

   b. **Project Objectives and Plans.**
      The project should have specific objectives that reflect the goals of the S-STEM program and local needs, as well as specific plans to select students, encourage them to achieve their best academic performance, and enable them to enter the workforce or continue studies in their fields.

c. **Significance of Project and Rationale.**
The proposal should address how the goals of the S-STEM program (see Program Description, Section II) will be met. In addition, it should include information on the demographics of the departments or programs affected by the scholarships, including number of majors and number of graduates per year, as well as information on overall enrollment and retention within the institution and programs involved. A rationale for the number of scholarships and the scholarship amount requested should also be provided.

d. **Activities on Which the Current Project Builds.**
S-STEM projects should build on existing student support structures and program elements. Proposals should discuss existing support structures and projects that are relevant to the S-STEM project and elaborate on the ways in which the S-STEM project will utilize or enhance the structures. Also provide information on prior S-STEM, CSEMS, or other scholarship projects on which the project builds. Proposals should describe specific support structures set up for S-STEM students.

e. **S-STEM Project Management Plan.**
S-STEM projects should be guided by a management plan in which the key personnel, the strategic plan, and project logistics are defined. The roles and responsibilities of the personnel involved should be clear. The Principal Investigator (PI) must be a faculty member in one of the S-STEM disciplines who can provide the leadership needed in order to ensure the success of the project. The PI will have overall responsibility for administering the project and for interacting with NSF. There should be evidence of strong faculty support and participation beyond the Principal Investigator within the disciplines impacted by this project. Financial aid and student support specialists as well as business and industry representatives may also be appropriate individuals to include in the management team as Co-Principal Investigators.

Plans should be in place for activities such as advertising and recruitment of students, selection of students, maintenance of S-STEM records, reporting responsibilities, oversight for student support services, and implementing a process by which students who lose S-STEM eligibility will be replaced by new students.

The management plan should indicate how students' eligibility will be determined, the mechanisms by which scholarships for students will be provided, and how scholarship program outcomes will be evaluated and disseminated. It should also identify criteria for retention of students' scholarships from one year to the next. Demographic information should be presented in the proposal, including student enrollment numbers, the number of majors and graduates, and data on retention, graduation, and job placement. The information should support the number and size of the scholarships requested.

Proposing institutions may request additional funds of up to 7% of the total scholarship amount for expenses related to program administration. Note that these funds are included in the maximum of $500,000 for each award. See Section V.A.8, Proposal Preparation Instructions, for a discussion of budget detail.

f. **Student Selection Process and Criteria.**
The proposal should include a plan for the process by which students will be selected to receive the S-STEM scholarship award. Included in this plan should be a description of the eligibility criteria to be used in selecting scholars. The program requires that the students meet the requirements for citizenship, major, academic potential, and need that are outlined in Section III.C, Eligibility Information, Scholarship Recipients. Projects should have additional selection criteria that reflect the local program. S-STEM scholars must be able to demonstrate their eligibility in each semester or quarter of S-STEM support.

The selection process for scholarship recipients should include indicators of academic merit and other indicators of likely professional success. Multiple indicators may be appropriate in gauging both academic merit (e.g., grade point average, placement test results) and professionalism (e.g., motivation, ability to manage time and resources, communication skills). Selection criteria should be flexible enough to accommodate applicants who come from diverse backgrounds and with diverse career goals. The program encourages efforts to increase the number of members of underrepresented groups (women, minorities, and persons with disabilities) in STEM fields, but it aims broadly to assist any student who has financial need.

g. **S-STEM Student Support Services and Programs.**
It is expected that awardee institutions will have or develop support programs and services designed to enhance student learning, confidence, performance, retention to graduation, and career or higher education placement. Examples of student support include:

- Recruitment of students to higher education programs and careers in the S-STEM disciplines;
- Support and mentoring of students by faculty and industry representatives;
- Academic support services such as tutoring, study-groups, or supplemental instruction programs;
- Industry experiences or internship opportunities;
- Community building and support among S-STEM scholars within the institution;
- Participation in local or regional professional, industrial or scientific meetings and conferences;
- Access to appropriate technology and technological support personnel; and
- Career counseling and job placement services for S-STEM scholars.

For support services and programs that already exist, there should be a plan to adapt them to meet the specific objectives of the S-STEM project.

Proposing institutions may request additional funds of up to 8% of the total scholarship amount for student support services. Note that these funds are included in the maximum of $500,000 for each award. See section V.A.8, Proposal Preparation Instructions, for a discussion of budget detail.

h. **Quality Educational Programs.**
Institutions should provide evidence of the quality of their educational programs, particularly those in the targeted disciplines. Where appropriate, cite external accreditations in the S-STEM disciplines (for example, ABET for engineering).

Institutions should also provide student performance data that documents the success of the academic programs. For example:

- Percentage of enrolled students who are retained through completion of the targeted degree;
- Percentage of students who continue their education at higher degree levels; and
- Data on student placement in employment or further higher education upon graduation.

i. **Assessment and Evaluation.**
As with all NSF projects, S-STEM projects must have clear and specific plans for assessment and evaluation. This includes not only assessment of student progress but overall evaluation of the S-STEM project. S-STEM projects are required to participate in regular NSF-led data collection activities to track the students. S-STEM projects should have impact on the departments and disciplines involved as well as the institution beyond simple student input and output. These goals must be clearly articulated in the S-STEM proposal. The S-STEM proposal should identify appropriate assessment and evaluation plans as well as plans for programmatic evaluation at the end of the project.

j. **Special Program Features.**
There are several considerations related to special features of the S-STEM program that may need to be considered and addressed in S-STEM proposals. These include:

The S-STEM solicitation specifies that a faculty member currently teaching in an S-STEM discipline must serve as the principal investigator for the project. The purpose of this requirement is to ensure that the faculty of the disciplines involved have a commitment to active involvement with the S-STEM scholars. In addition to the faculty involvement, it is often helpful if a team of individuals, including financial aid and student support specialists, is developed for the S-STEM project. S-STEM proposals must document and show strong faculty involvement and commitment through leadership of the principal investigator, as well as through identification of other faculty who will be involved and the nature of their involvement.

Experience in the predecessor CSEMS program indicates that the most successful scholarship projects involve a group of students who in some way naturally associate, whether as majors in the same department, or sharing classes, or participating together in activities of common interest. Since students in many more disciplines are potentially eligible for S-STEM scholarships, the project design should include plans to attract and maintain a cohort of students who hold scholarships. This may be done by limiting the project to students in one major, or in closely related majors, but other means may be proposed.

S-STEM projects should provide student support structures that help the scholarship recipients

succeed as students and, later, as working professionals. Ideally, S-STEM scholars are part of a cohort that is managed and supported as part of an active learning community. This can involve existing support structures or new support mechanisms to be developed by the S-STEM project. S-STEM proposals should describe these support structures and explain, particularly in the case of existing support structures, how the S-STEM students will be involved with the support structure or activity.

S-STEM projects often include enhancements such as research opportunities, tutoring of others, and internships for scholarship recipients. While these activities can clearly enhance the student experience, they must be included as optional components of the S-STEM project. S-STEM scholarships often provide funds that allow students to concentrate on full time studies rather than full time work. Thus, the program should not require regular additional activities that might be viewed as work to be done for the scholarships. The enhancement opportunities are valuable components of S-STEM projects as long as they are clearly optional for the students.

Students who receive S-STEM scholarships must be enrolled full time in a degree program in one of the S-STEM disciplines. Often there are programs at an institution that do not have exactly the same title as an S-STEM discipline, but might be related to or part of the S-STEM discipline. In cases where students are in programs that are not included in the specific S-STEM disciplines, the proposal must clearly document and justify the inclusion of the program in the S-STEM scholarship group. This normally involves identification of the type of curriculum involved and what further study or careers students follow upon graduation. These must clearly match with the technical nature of the S-STEM discipline curricula. If necessary, S-STEM proposals should address this issue in enough detail so that expert reviewers can see the connection and relevance of the project to the S-STEM disciplines.

Many students may not be eligible for the maximum scholarship of $10,000 per year, depending on the student’s expected family contribution and the amount of the institution’s cost of attendance. The proposal budget requires an estimate of both the number of scholarships to be awarded and the total amount of funds that would be required. The proposal should include an explanation of how these estimates were determined. The proposal should include the potential number of students in the proposed cohort (for example, a disciplinary major) and an estimate of the number of these students who might have financial need. It may be helpful to consult with the financial aid office at the institution to determine typical financial need for the proposed cohort of students (or for some larger group of students if information on the smaller cohort is not easily available). While there is flexibility within a project budget after a grant is made, the size of the budget request must be closely related in the proposal to a realistic estimate of student need.

S-STEM scholarships involve full time students who are financially needy as well as academically talented. NSF has adopted the standard U.S. Department of Education guidelines for determining financial need as well as allowable educational expenses. NSF, however, cannot prescribe the way in which local financial aid offices or departments develop policies or manage their students. Thus, rather than defining a specific number of hours for full time classification, S-STEM provides that students are full time if classified as full time by their local institution. Similarly, NSF cannot dictate financial aid policy to institutions. While we hope that our broad interpretation of allowable educational expenses will be used to calculate need and funding potential, NSF must rely on local financial aid office policies about management of student aid and scholarship funds. Likewise, each institution determines measures of academic promise for its students. Principal investigators developing S-STEM proposals should talk over these issues with appropriate financial aid offices as well as their discipline faculty in developing policies and criteria that are included in the S-STEM proposal.

k. **Project Description Content Checklist.**

In summary, the proposal should clearly describe the plan for implementing a program with the goals and characteristics outlined in the preceding text. The proposal should include, within the project description (limited to 15 single-spaced pages), the following:

- Results from prior NSF support, with particular emphasis on any prior CSEMS or S-STEM awards made to the institution;
- Statement of the project objectives and plans;
- Discussion of the project's significance, including demographic information and rationale for the number of scholarships and the scholarship amount requested;
- Discussion of activities on which the project builds (particularly connections to any existing CSEMS or S-STEM award at the institution);
- Description of the management plan, including discussion of the role of faculty in the

disciplines in the operation of the project;
- Outline of the student selection process and criteria;
- Description of the student support services and programs, and their impact on students;
- Evidence of the quality of the institution's educational programs; and
- Plans for project assessment and evaluation.

6. **References Cited.** If applicable.

7. **Biographical Sketches.**
Include a 2-page biographical sketch for the Principal Investigator and each listed Co-Principal Investigator and/or Senior Personnel.

8. **Budget, Budget Justification, and Allowable Costs:**
Provide a budget for each year of support requested. The maximum S-STEM request is normally not to exceed $500,000 in total. Annual budgets are limited to $125,000. The annual and cumulative limits include all funds (scholarships, administrative costs, and student support costs).

    - Budgets may be included for up to four scholarship years. Because S-STEM grants are expected to be made this year during the summer of 2006, it may not be possible for projects to award scholarships for the fall of 2006. In order to carry out planning for the scholarship project and to put administrative and support structures in place, proposals may request funds for an additional initial period of up to a year before scholarship awards are made. Only administrative costs should be shown on the budget for this initial period, and these costs are included in the 7% of the total scholarship amount allowed for program administration. Including the initial period, the maximum grant period may thus be between 48 and 60 months.
    - No indirect costs are allowed.
    - Allocations for scholarships should be indicated in Section F.1 Participant Support - "Stipends" of the budget form. Scholarships may be requested for up to $10,000 per student per year. Because many students may not be eligible for the maximum scholarship amount of $10,000, the proposal should explain how the number of scholarships requested and the total amount of scholarship funds requested were determined.
    - In addition, up to 15% of the total scholarship amount shown on budget line F.1. may be requested for expenses related to program administration (up to 7%) and student support services (up to 8%). The request for funds under this 15% allowance must be assigned to the appropriate NSF budget categories on the NSF budget form and must be explained on the budget explanation page. Refer to the GPG instructions for appropriate categories. Do not enter any costs on line G.6. (Other Direct Costs - "Other") or F.4. (Participant Support Costs - "Other"). The limits for administrative and student support costs apply to the cumulative budget; projects may propose to distribute these costs unevenly among the annual budgets.
    - Faculty salary requests must be accompanied by an appropriate indication of the fraction of academic or summer months to be paid by the grant. If no salary is requested from the grant, then the fraction of NSF-funded academic and summer months should be listed on the budget form as zero.

9. **Current and Pending Support.**
Provide a list of Current and Pending Support for the Principal Investigator and each Co-Principal Investigator. All investigators should list the S-STEM proposal as a pending project.

10. **Facilities, Equipment, and Other Resources.**
See GPG Section II. D.9.

11. **Supplementary Documentation.**
Evidence of the high quality of academic programs or excellence in student recruitment, support, or career placement may be included as supplementary documentation. Scanned copies of letters of institutional support and letters documenting partnership commitments should also be included as supplementary documentation. Do not send paper copies to NSF.

Proposers are reminded to identify the program announcement/solicitation number (06-527) in the program announcement/ solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required by NSF in proposals submitted under this Program Solicitation.

Indirect Cost (F&A) Limitations:

No indirect costs are allowed.

Other Budgetary Limitations:

Additional funds up to 15% of the total scholarship amount may be requested for expenses related to program administration (up to 7%) and student services (up to 8%), all of which must be listed under the appropriate NSF budget categories. See section V.A.8 above for details. Do not enter items in either G.6. or F.4., "Other."

C. Due Dates

Proposals must be submitted by the following date(s):

Letters of Intent *(optional):*

March 15, 2006

Full Proposal Deadline(s) (due by 5 p.m. submitter's local time):

April 12, 2006

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?
How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?
How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education
One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities
Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria:

Reviewers will be asked to consider the above two merit review criteria with emphasis placed on the S-STEM program components (see "Program Description"). Those elements include:

- Student-support infrastructure for the successful graduation of scholarship recipients,
- Management and administration plan that is effective and clearly articulated,
- Evidence of faculty participation and support from the appropriate financial aid and student services personnel,
- Justification of the number and amount of scholarships requested based on current student demographics, and
- Educational program of high quality.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Panel Review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards are administered in accordance with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CA-FATC). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

Consistent with the requirements of OMB Circular A-16, *Coordination of Geographic Information and Related Spatial Data Activities*, and the Federal Geographic Data Committee, all NSF awards that result in relevant geospatial data must be submitted to Geospatial One-Stop in accordance with the guidelines provided at: www.geodata.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov/.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/awards/managing/. Paper copies of these documents may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

In addition, in response to the need for NSF to report on the operation and success of the S-STEM program, a web-based data collection site has been developed for the purpose of collecting information about program participants.

Each S-STEM PI is required to complete information about each S-STEM scholar and subsequently update the information reported through the web site during each semester of continued S-STEM support. Instructions will be provided shortly after the award to successful grantees. This information must be provided within 30 days of the beginning of each semester or quarter and includes the following information about each S-STEM scholar: name, permanent address, school address, major, career goals, race/ethnicity (student's option to report), disabilities (student's option to report), gender, date of birth, grade point average, participation in an internship (in an S-STEM-related area), and student employment (part-time or full-time; not necessarily in an S-STEM-related area). Any information that would permit identification of individual respondents will be held in strict confidence.

An external evaluator has been retained to assist in the program evaluation process. This evaluator will use the demographic data and student contact information to conduct formative and summative evaluation of the S-STEM program which includes post-graduation and post-employment assessment. These data are not used to evaluate individual projects.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

PIs are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. PIs will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

VIII. CONTACTS FOR ADDITIONAL INFORMATION

General inquiries regarding this program should be made to:

- Duncan E. McBride, Section Head, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-4630, fax: (703) 292-9015, email: dmcbride@nsf.gov
- Bevlee A. Watford, Program Director, Directorate for Education & Human Resources, Division of Undergraduate Education, 835 N, telephone: (703) 292-5323, fax: (703) 292-9015, email: bwatford@nsf.gov

For questions related to the use of FastLane, contact:

- FastLane Help Desk, telephone: 800-673-6188, email: fastlane@nsf.gov
- Antionette T. Allen, Computer Specialist, Directorate for Education & Human Resources, Division of Undergraduate Education, 840 S, telephone: (703) 292-4646, fax: (703) 292-9016, email: aallen@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each

chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's MyNSF News Service (http://www.nsf.gov/mynsf/) to be notified of new funding opportunities that become available.

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

- **Location:** 4201 Wilson Blvd. Arlington, VA 22230
- **For General Information** (NSF Information Center)**:** (703) 292-5111
- **TDD (for the hearing-impaired):** (703) 292-5090
- **To Order Publications or Forms:**

  Send an e-mail to: pubs@nsf.gov

  or telephone: (703) 292-7827
- **To Locate NSF Employees:** (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science

Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

The National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230, USA
Tel: (703) 292-5111, FIRS: (800) 877-8339 | TDD: (800) 281-8749